

66356

SOV/81-59-19-67722

# The Spectral Analysis of Titanium, Molybdenum and Their Alloys for Nitrogen, Hydrogen and Oxygen

of N determination at the excitation of the spectrum by a low-voltage pulse discharge from a capacitance of  $4,000 \mu$  farad has been shown. The determination of 0.1 - 1% O in Ti is carried out also in a pulse discharge but at a capacitance of  $400 \mu$  farad without introduction of inductance; the discharge vessel is filled up with helium to a pressure of 500 mm Hg. The distance between the sample and the carbon rod of 6 mm in diameter sharpened to a truncated cone is 1 mm; the slit width of the spectrograph is 0.02 mm. The lines O 4705.32 and O 7771.9 A are compared with the background of the spectrum. For photographing one spectrum 80 pulses are necessary. It has been shown that the intensity of the O lines depends in different ways on the energy of the discharge for different metals, e.g. for Ti the optimum intensity is reached at  $400 \mu$  farad, for molybdenum at  $4,500 \mu$  farad. Concentrations of 0.005 - 0.15% H in Ti are found at the excitation of spectra by a single low-voltage pulse discharge at a capacitance of  $2,000 \mu$  farad, a tension of 270 v and a self-induction of  $10 \mu$  henry between the sample cathode and the Cu-electrode of 3 - 5 mm in diameter sharpened to a point; the discharge takes place in the interelectrode gap of 0.3 mm in the air medium. The spectra are photographed on an ISP-51 spectrograph with a UF-85 camera

Card 2/3

SVENTITSKIY, N.S.; SUKHENKO, K.A.; FAL'KOVA, O.B.; GALONOV, P.P.;  
TAGANOV, K.I.; ALPATOV, M.S.

Spectrum analysis of titanium, molybdenum, and their alloys  
for nitrogen, hydrogen, and oxygen. Fiz.sbor. no.4:225-231  
'58. (MIRA 12:5)

1. Vsesoyuznyy ordena Lenina nauchno-issledovatel'skiy institut  
aviatsionnykh materialov.  
(Gases in metals) (Spectrum analysis)

AUTHORS: ~~Sulchenko, K.A.~~, Moiseyeva, K.A., Tishin, I.G., 32-24-6-17/44  
Metelina, L.D.

TITLE: The Analysis of Some Elements in Alloys With the Aid of the  
Photoelectric Stylometer (Analiz nekotorykh elementov v splavakh  
pri pomoshchi fotoelektricheskogo stilometra)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol 24, Nr 6, pp 711-712 (USSR)

ABSTRACT: The determination of elements which had hitherto been insufficient  
when carried out by the photographic methods of spectral analysis,  
were carried out as e.g., the analysis of aluminum in nickel- and  
magnesium alloys with high Cu-, Zn- and Mg concentrations in alumi-  
num alloys and a high tungsten content in steels. Experimental con-  
ditions are described, from which it may be seen that better re-  
sults were obtained with a phase heating of 90° and a current of  
3 amperes. Control of the stability of the position of the diagrams  
showed that considerable changes take place in spite of the fact  
that the temperature fluctuations were only slight. Results of con-  
siderable accuracy were obtained by means of carbon-, copper-, and  
nickel electrodes, in which case, however, calibration curves do  
not coincide. It was found that the quality of the experimental

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The Analysis of Some Elements in Alloys With the Aid  
of the Photoelectric Stylometer

32-24-6-17/44

preparation and fixing of the sample exercise a considerable influence upon the accuracy of the results of the analysis. Determination of magnesium, zinc and copper in duraluminum B-95 and AMK and the determination of aluminum in a magnesium alloy showed, in addition to the results obtained by the aforementioned analyses, that the stylometer FES -1 can be used for the quantitative determination of elements in steels as well as in aluminum and nickel alloys. The error limits are given. Analysis, if the calibration curve is used, is said to take about 4 minutes. There are 2 figures and 1 table.

1. Alloys---Analysis
2. Spectrum analyzers---Performance

Card 2/2

The Analysis of Light and Refractory Alloys and Steels for Photoelectrical Methods SOV/48-23-9-25/57

shows the lines which were measured, as well as the concentration interval of the alloy elements, and the error in determination. Investigations were carried out of aluminum alloys with respect to magnesium, zinc, silicon, and copper, as well as of magnesium alloys to aluminum. The diagrams for the determination of silicon in the alloys Al-9, Al-5 and duralumin are shifted only little. The third part deals with the analysis of steels. These steels were investigated with regard to content of tungsten, chromium, manganese, and silicon, and table 3 gives the measured lines in Å, the width of the gap, the concentration intervals, and the errors in determination. It is found that, in the experiments carried out, no re-sharpening of the samples was necessary after the determination of an element, and that a considerable shortening of the time needed for the analyses was possible. The last part deals with the application of photoelectrical attachments in the spectrograph of the type ISP-22 for the analysis of aluminum- and magnesium alloys. Here, the emission within the range of wavelengths of 2900-2000 Å is recorded by means of a Geiger-Mueller counter. An arc generator of the type DG-1, the spark generator of the type

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SOV/48-23-9-29/57

24(7)  
AUTHORS: Sakhenko, K. A., Grigorova, V. S., Lindstrom, I. S., Sventitskiy, M. S., Galonov, P. P.

TITLE: The Determination of Oxygen in Technical Titanium by Means of the Spectral Method

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 9, pp 1116 - 1118 (USSR)

ABSTRACT: In the introduction mention is made of the papers published in recent years on the determination of gases in metals in general, and especially on the determination of oxygen in titanium. (Refs 1-7). A pair of lines of oxygen and argon is given, by means of which the concentration of oxygen in titanium was determined within a range of 0.035 - 0.56%. Already in another paper (Ref 7) it was shown that the influence of "third" elements is lacking, and it is possible by this method to determine the oxygen content with an accuracy equaling that of vacuum melts or of bromine reductions. In the case of the experiments carried out here, titanium standards with an oxygen content of 0.01 - 2.0% were produced, in which case titanium-sponge was mixed with  $TiO_2$  in appropriate ratios. The electrodes

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The Determination of Oxygen in Technical Titanium  
by Means of the Spectral Method

SOV/48-23-9-29/57

periments concerning the influence of annealing upon line intensities showed that the latter are independent of annealing. Experiments concerning the most favorable selection of the light source showed that low-voltage spark discharges are suited best. Figure 3 shows a diagram for the determination of oxygen in technical titanium according to the intensity of an oxygen line. This diagram was obtained by means of a low-voltage spark light source. Further investigations showed the usefulness of the DG-1-type generator for low-voltage spark discharges. There are 3 figures and 7 references, 2 of which are Soviet.

Card 3/3

The Determination of Nitrogen in Steels of Various  
Compositions

SOV/48-23-9-32/57

analytical methods. In the discharge chamber helium was used as a neutral medium. The diagram of figure 1 shows the calibration line for nitrogen determination in steel. A low-voltage spark generator and a pulsed-discharge generator were used as light sources. The scheme of a combined generator is shown by figure 2. In this circuit miniature electrolytic condensers and paper condensers are used, and semiconductors serve as rectifiers. In the spectral analysis of nitrogen in steels the influence of "third" elements was found. All experiments carried out on samples with about 1% Al yielded too high values. An increase in chromium with a simultaneous decrease in nickel causes a steeper slope of the calibration curve. There are 2 figures and 4 tables.

Card 2/2



The Setting of Standards for Various Alloys and the Investigation of the Influence of "Third" Elements Therein SOV/48-23-9-43/57

bration curves for the determination of boron and lead in various Ni-alloys. Experiments were then carried out by varying the amperage, the shape of the electrodes, and the like, in order to prevent the influence exercised by "third" elements, but these experiments were not successful. Finally, the possibility is pointed out of reducing the influence of "third" elements by a suitable selection of the light source. K. A. Moiseyeva took part in the investigation of titanium alloys. There are 1 figure, 1 table and 2 Soviet references.

Card 2/2

28 (5)  
AUTHORS:

Gegeshkordi, N. H., Pashanova, V. M.,  
Vasilevskaya, I. M., Gerasimova, V. V., Kozlov, I. A.,  
Dmitryukhin, A. S., Galkina, Z. P., Fedan, G. A., Mamon,  
Z. A., Shukovskaya, E. M., Shukovskiy, E. A., Barabara, T. V.,  
Fialin, I. G., Melnikov, D. G.

See in Brief

PERIODICAL:

ABSTRACT:

Sovetskaya Laboratoriya, 1959, Vol. 25, No. 6, pp. 981-985 (USSR)  
The authors determined the impurities of Si, Fe, Al, Mn, Mg, Cu, Ca, Zn, Pb, Sn, and Ba in thorium dioxide with a sensitivity of  $10^{-5}$ - $10^{-6}\%$  by burning a briquette from the sample mixed with carbon powder (5:1) in the crater of a carbon electrode type "Tymek". The spectrograph IZP-22 was used. The analytical data are listed. 2) The author reports on the application of a photoelectric device PZS-1 for the rapid analysis of open-hearth furnace slag for silicon dioxide ( $10^{-3}\%$ ), sodium oxide ( $10^{-3}$ - $10^{-4}\%$ ) and complete iron ( $5-15\%$ ). There is a description of the operational method. 3) The laboratory's method (plant laboratory) for the determination of titanium impurities (of an approximately 0.01% concentration) in aluminum

Cont 1/4

alloys according to a refractory furnace method. 4) The author reports on a method for localized spectrum analysis of steels and welded seams for the determination of phosphorus. The distribution of P was investigated in this layer (up to 0.02 mm) of metals and welded seams by the use of a DC-1 generator and a quartz spectrograph and the phosphorus contents of microscopic inclusions and thin coatings were investigated. 5) The author determines calcium oxide and ferric oxide in slags of electric furnaces in which the slag sample (0.2 g) was wetted with a saturated aqueous copper sulfate solution (2 ml) subsequently dried and put in 10 craters of two arc carbon electrodes. Spectrograph IZP-22 and generator DC-1 were used. 6) The author determines the content of carbon in the slag by the method of electrolytic separation and subsequent refractory substances by mixing the sample with carbon barium nitrate (1:1) and operating it in the crater of a carbon electrode. 7) The author reports on a method for the determination of phosphorus in a spectrograph IZP-22 was used. The method was introduced at the Plant "Magnitit", Kuznetsk Metallurgical Kombinat (Kuznetsk Metallurgical Kombinat) and Zaporozh'skaya apromer (Zaporozh'skaya Plant of Refractory Materials). 8) The author applies a spectrum method for the determination of phosphorus

Cont 2/4

pentoxide in silicon dioxide. The determination takes only 2 hours. 20 mg of the sample mixed with carbon (1:1) is put into the carbon electrode and the spectrum lines are measured with a spectrograph IZP-22. 9) The authors, working in the laboratory of the Institute (Institute Laboratory) report the preparation of standard samples from technical Fe for the determination of hydrogen by the spectrum method. The article contains a description of the method and the results of the determination of hydrogen in standard samples (Table). The difference in analysis results is not more than 0.01%. 10) The authors report on a simple spectrum method for the determination of small quantities of Ba and Mn in sodium chloride water of high mineral contents. He used a spectrograph IZP-22, microphotometer IF-2 and standard samples. There are 1 figure and 1 table.

ABSTRACTS:  
1) Laboratory method for the determination of phosphorus in the Scientific Research Institute, 2) Zvezd "Serp i molot" (Plant "Serp i molot"), 4) Institut elektrometallurgii im. Ye. O. Paton Akademii nauk USSR (Electric Welding Institute im. Ye. O. Paton of the Academy of Sciences of the USSR), 5) Stalagradskiy metallurgicheskiy zavod "Travnyy Otkrytiy" (Stalingrad Metallurgical Plant "Travnyy Otkrytiy"), 6) Vsesoyuznyy nauchno-issledovatel'skiy institut spetsperov, Kharkov (All-Union Scientific Research Institute of Refractory Materials, Kharkov), 7) Zhukovskoye radopromislennyye, 8) Yelkuvskaya (Zhukovskiy Mining Administration, City Yelkuvskaya), 9) Ufimskiy nauchno-issledovatel'skiy institut (Ufa Petroleum Scientific Research Institute)

Library of Congress

GALONOV, P.P.; SUKHENKO, K.A.; SVENITSKIY, N.S.; ISAYEV, N.G.; TISHIN, I.G.;  
BARASHEVA, T.V.

Determination of nitrogen in steel and of hydrogen in commercial  
titanium and its alloys. Trudy kom.anal.khim. 10:190-195 '60.  
(MIRA 13:8)

(Titanium--Analysis)  
(Hydrogen--Analysis)  
(Nitrogen--Analysis)  
(Steel--Analysis)

MLADENTSEVA, O.I.; GOROZHANKINA, N.P.; SUKHENKO, K.A.; AKSENOVA, A.V.

Spectrum analysis of nickel alloys into basic components and impurities.  
Trudy Kom. anal. khim. 12:355-365 '60. (MIRA 13:8)

(Nickel alloys--Analysis)  
(Spectrum analysis)

SUKHOMKOV, K.A., kand. tekhn. nauk, red.; KIMELITSEV, A.G., kand.  
tekhn. nauk, red.; KOPCHENKO, S.I., red.; FOMELIKOVA, N.A.,  
tekhn. red.

[Photoelectric methods of spectral analysis: collection of  
articles] Fotoelektricheskie metody spektral'nogo analiza;  
sbornik statei. Moskva, Gos.nauchno-tekhn.izd-vo Oborongiz,  
1961. 95 p. (MIRA 15:1)

(Spectrum analysis)

S/081/62/000/016/007/043  
B168/B186

AUTHORS: Sukhenko, K. A., Moiseyeva, K. A., Tishin, I. I., Bakanov,  
D. G., Metelina, L. D., Al'tman, T. D.

TITLE: Photoelectric methods of analysis and their use in the  
inspection of metals

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 16, 1962, 119, abstract  
16D106 (In collection: Fotoelektr. metody spektr. analiza.  
M., Oborongiz, 1961, 5-19)

TEXT: Operational results of the Soviet quantometer ДФС-10 (DPS-10) for  
the analysis of alloys based on Al, Mg, Ni, Ti and Fe are given. A brief  
description of the apparatus is followed by a list of the analytical lines  
and concentration ranges and by a description of the analytical conditions  
for various alloys; many calibration curves and tables are given showing  
the reproducibility of determinations of the elements. The mean random  
error in each case is calculated from 20-40 repeat determinations under  
various conditions (light source, polarity, material of support electrode,  
etc.). This method is shown to give greater analytical accuracy than the

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Card 1/2

S/137/62/000/005/146/150  
A052/A101

AUTHORS: Sukhenko, K. A., Filatov, F. I., Galonov, P. P., Moiseyeva, K. A.,  
Metelina, L. D.

TITLE: An analysis of Al alloys on a multichannel quantometer

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 5, 1962, 6, abstract 5836  
(V sb. "Fotoelektr. metody spektr. analiza", Moscow, Ozerongiz,  
1961, 44-66)

TEXT: A preliminary experience in analyzing AlMg (AMg) and duralumin alloys by means of a multichannel quantometer of ARL company is reported. It is recommended to use graphite and carbon electrodes dressed in the form of semi-sphere and truncated cone, depending on the object of investigation. To increase the accuracy of the analysis, the room where the quantometer is placed must have an air conditioning installation securing temperature fluctuations of  $\pm 0.5^{\circ}\text{C}$ . For a quick analysis cast electrodes 6-8 mm in diameter are suitable as samples, and also samples in the form of drawn wire and disks. The accuracy of determination is 1-2%.

L. Vorob'yeva

[Abstracter's note: Complete translation]

Card 1/1



S/137/62/000/005/145/150  
A052/A101

AUTHORS: Sukhenko, K. A., Al'tman, T. D.

TITLE: Investigation of Al alloy standards by photoelectric method

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 5, 1962, 6, abstract 5X35  
(V sb. "Fotoelektr. metody spektr. analiza", Moscow, Oborongiz, 1961, 70-81)

TEXT: An investigation and comparison of Soviet, English and German Al alloy standards of various grades was carried out by photoelectric method on LQD-10 (DPS-10) quantometer. A comparison of graduation diagrams for all standards shows a fairly good concentration relationship for Cu, Zn, Fe, Cr, Si, Ti, Mg and Mn. A certain discrepancy of graduation diagrams is due to the different manufacturing technology of standards and to the different chemical composition of alloys. The test samples of all alloys were prepared in the form of rods 6-7 mm in diameter. This made it possible to obtain a finer structure and a sufficient uniformity of chemical composition.

L. Vorob'yeva

[Abstracter's note: Complete translation]

Card 1/1

S/137/62/000/005/148/150  
A052/A101

AUTHORS: Sukhenko, K. A., Filatov, F. I., Moiseyeva, K. A., Galonov, P. P.  
Ketelina, L. D.

TITLE: Determination of boron in Ni alloys

REFERENCE: Referativnyi zhurnal, Metallurgiya, no. 5, 1962, 6, abstract 5K40  
(7 ab. "Fiziko-khimiya, metody spektr. analiza". Moscow, Oborongiz,  
1961, 82-85)

TEXT: To determine B, DCH-13 (DPS-13) medium-dispersion quartz spectro-  
graph and DQC-13 (DPS-13) spectrograph were used. In the same samples B was  
determined also by the photoelectric method on a multichannel quantummeter under  
low-voltage arc conditions. For a sample with 0.025 B the mean arithmetic error  
is  $\pm 6\%$ . The results obtained by photoelectric and photographic methods coincide  
well with the results of a chemical analysis.

L. Vorob'yeva

[Abstracter's note: Complete translation]

Card 1/1

Судебный  
Шесть 40, 4/4 А

105

PHASE I BOOK EXPLOITATION

SOV/6181

Ural'skoye soveshchaniye po spektroskopii. 3d, Sverdlovsk, 1960.  
Materialy (Materials of the Third Ural Conference on Spectroscopy) Sverdlovsk, Metallurgizdat, 1962. 197 p. Errata slip inserted. 3000 copies printed.

Sponsoring Agencies: Institut fiziki metallov Akademii nauk SSSR. Komissiya po spektroskopii; and Ural'skiy dom tekhniki VSNTO.

Eds. (Title page): G. P. Skornyakov, A. B. Shayevich, and S. G. Bogomolov; Ed.: Gennadiy Pavlovich Skornyakov; Ed. of Publishing House: M. L. Kryzhova; Tech. Ed.: N. T. Mal'kova.

PURPOSE: The book, a collection of articles, is intended for staff members of spectral analysis laboratories in industry and scientific research organizations, as well as for students of related disciplines and for technologists utilizing analytical results.

COVERAGE: The collection presents theoretical and practical problems of the application of atomic and molecular spectral analysis in controlling the chemical composition of various materials in ferrous and nonferrous metallurgy, geology, chemical industry, and medicine. The authors express their thanks to G. V. Chentsova for help in preparing the materials for the press. References follow the individual articles.

Materials of the Third Ural Conference (Cont.)	30V/6181
Kuranov, A. A., and N. P. Ruksha. Spectral determination of impurities in platinum	91
Sin'kov, N. A. Examination of some variants of calculating unknown impurity concentrations by the "additives" method	93
Fishman, I. S., and F. K. Sattarova. Chemical-spectral determination of carbides and intermetallic compounds in nickel alloys	99
Sukhenko, K. A., V. S. Grigor'yeva, I. S. Lindstrem, N. S. Sventitskiy, and P. P. Galonov. Methodology for spectral determination of oxygen in titanium and its alloys	101
Popov, B. V. Use of spectral analysis at the Ural Automobile Plant	102
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Card 8/15	

S/046/62/026/007/016/030  
B104/B138

AUTHORS: Buyanov, N. V., Komarovskiy, A. G., and Sukhenko, K. A.

TITLE: Photoelectric methods of spectrum analysis and their industrial application

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 7, 1962, 902-906

TEXT: Spectral analysis in Soviet industry is carried out with photoelectric devices produced by the American firm ARL, the Italian firm Optico-Milano, and the British firm Hilger, and also with the Soviet quantumeters  $\Phi\Phi\text{C}-10$  (DFS-10),  $\Phi\Phi\text{C}-1$  (FES-1). Series production of the 10-channel  $\Phi\Phi\text{C}-31$  (DFS-31) is planned to start in 1962. The DFS-10 is compared with the ARL quantumeter, and found to be less accurate. The following must be improved in the Soviet make: the amplifying and recording system, light source, and the stand; some of the photocells must be replaced by photomultipliers. In addition, the voltage and frequency must be stabilized. There are 1 figure and 4 tables.

Card 1/1

S/048/62/026/007/020/030  
B125/B104

AUTHORS:

Grigorova, V. S., Lindstrem, I. S., Sventitskiy, N. S.,  
and Sukhenko, K. A.

TITLE:

Oxygen determination in low-melting metals and  
alloys by the spectral method

PERIODICAL:

Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya,  
v. 26, no. 7, 1962, 924-926

TEXT: The oxygen content in niobium and molybdenum alloys is best determined from their spectra with simultaneous extraction of the gases. The specimen was used as an anode of the discharge current circuit (24,000  $\mu$ F) of a low-voltage pulse generator. The experimental conditions can thus be easily standardized; the effect of impurities can be eliminated, and electrode erosion can be intensified. A niobium cone with 0.004% oxygen was used as a cathode. Aluminum cathodes can also be used. The discharge took place in commercial helium of 250 mm Hg. The oxygen content of He should be 0.01% at most; its nitrogen content should be sufficient for localizing the discharge. The spectra were

Card 1/2

APYKOV, V.I.; VYKHENKA, N.I.; ABDRAKIMANOV, G.S.; SITNIKOV, G.V.

Modeling intensive circulation-loss zones using a hydraulic-mechanical model. Birenie no.8411-12 '64.

(MIRA 18:5)  
"Sverdlovskiy neftyanoy nauchno-issledovatel'skiy institut, g. Bugul'ma i trust "Al'met'yevburneft".

ABDRAKHMANOV, G.S.; KAPLAN, V.I.; SUKHENKO, N.I.

Hydraulic expander for increasing the diameter of a well.  
Burenie no.4:3-5 '64.

(MIRA 18:5)

1. Tatarskiy neftyanoy nauchno-issledovatel'skiy institut, g.  
Bugul'ma.



ARYLOV, V.I.; ABDRAKHMANOV, G.S.; SUKHENKO, N.I.

Use of drillable packers to exclude circulation-loss zones and  
cave-ins. Burenie no.7:8-10 '64. (MIRA 18:5)

1. Tatarskiy neftyanoy nauchno-issledovatel'skiy institut, g.  
Bugul'ma.

PUSHEV, M.S., inzhener; SUKHENKO, S.D., inzhener.

Die-stamped compressed wood fiber furniture elements. Der.prom.  
4 no.11:12-13 H '55. (MLRA 9:2)  
(Wood, Compressed)

"APPROVED FOR RELEASE: 07/13/2001

CIA-RDP86-00513R001653810017-9

SECRET

APPROVED FOR RELEASE: 07/13/2001

CIA-RDP86-00513R001653810017-9"

68-9-1/15

AUTHORS: Sukhenko, S. I.

TITLE: Preparation of a Charge of Kuznetsk Coal by Selective Crushing (Podgotovka shikhty iz kuznetskikh ugley metodom izbiratel'nogo drobleniya)

PERIODICAL: Koks i Khimiya, 1957, Nr 9, pp. 3-7 (USSR)

ABSTRACT: Advantages of applying preferential grinding for coking blends from Kuznetsk coals were investigated. The size distribution of coals as received is given in Table 1, and the petrographic composition of the above coals in Table 2. Under works' conditions of crushing, the fusite group is concentrated in a size range exceeding 2-3 mm. Data on the thickness of the plastic layer and ash content of large and small size fractions of coals before crushing are given in Table 3. As the first step, the strength of coke produced from the individual size ranges of works crushing was studied. The best coke was obtained from size ranges 2-0 mm and 1-0 mm. An experimental blend was made from coals as received (except that coal above 50 mm was precrushed to -50 mm) and divided into three parts. One part was crushed by the usual works' practice, the second part was crushed as follows: screened at 3 mm, ~~3~~ mm crushed to pass 3 mm and well mixed together. The third part: screened at 2 mm, above 2 mm crushed to pass 10 mm and again -2 mm fraction removed. The

Card 1/3



68-12-3/25  
Calculation of Blends for Coking on the Basis of the Petrographic  
Features of Coals.

$$K = \frac{\sum c_1 \cdot K_1 + \sum c_2 \cdot K_2 + \dots + \sum c_n \cdot K_n}{\sum_1^n c}$$

where  $K_1, K_2, \dots, K_n$  - coking coefficient of corresponding ranks at a given content of leaning components in the blend. Values for  $K$  are given in fig.2. From the leaning index and coking coefficient determined for a given blend, the corresponding coke strength can be determined from the diagram (Fig.3). An example of such calculations is given. It is stated that a very good agreement between the calculated and determined values for coke strength was obtained (correlation coefficient determined for 44 cases was 0.827). It is pointed out that maximum fissuring of coke is obtained when the individual components of a coal blend differ considerably in their rank. It is concluded that the method proposed can be used for calculating the required composition of multi-component blends containing fusenic coals and up to 25% of

Card 3/4

AMMOISOV, I.I.; SUKHENKO, S.I.; YEREMIN, I.V.; OSHURKOVA, L.S.

Calculating coke charges on the basis of the petrographic  
characteristics of coals. Trudy IGI 8:21-30 '59.  
(MIRA 13:1)

(Coke industry) (Coal)

KUPERMAN, P.I.; SUKHENKO, S.I., kand.tekhn.nauk

New data on the vertical shrinkage of the charge from Kuznetsk coals.  
Koks i khim. no.4:20-24 '60. (MIRA 13:6)

1. Vostochnyy uglekhimicheskiy institut (for Kuperman). 2. Kuznetskiy  
metallurgicheskiy kombinat (for Sukhenko)  
(Coal--Carbonisation)



FRISHBERG, V.D.; SUKHENKO, S.I.

Coking time for coal charges containing an increased amount of gas  
coal from the Kuznetsk Basin. Koks i khim. no.8:11-12 '60.

(MIRA 13:8)

1. Vostochnyy uglekhimicheskiy institut (for Frishberg). 2. Kuznetskiy  
metallurgicheskiy kombinat im. I.V.Stalina (for Sukhenko).  
(Coal--Carbonization)

ZHEREBIN, B.N.; MISHIN, P.P.; KUDOYAROV, M.S.; SUKHENKO, S.I.; RASKIN, V.Z.;  
OSTROUKHOV, M.Ya.; RAKOV, V.V.

Experimental blast furnace smelting using coke from large-capacity  
coke ovens. Koks i khim. no.2:23-29 '64. (MIRA 17/4)

1. Kuznetskiy metallurgicheskiy kombinat (for Raskin).
2. Chelyabinskiy institut stali (for Ostroukhov). 3. Kuznetskiy  
filial Vostochnogo uglekhimicheskogo instituta (for Rakov).

9(2)

SCV/107-59-4-39/45

AUTHOR: Arytyunova, I., Sukhenko, T. (Baku)

TITLE: AC Voltage Stabilization by One Gas-Discharge Stabilizer Tube (Stabilizatsiya peremennogo napryazheniya odnim gazorazryadnym stabilitronom)

PERIODICAL: Radio, 1959, Nr 4, p 56 (USSR)

ABSTRACT: AC voltage stabilization circuits usually are composed of two gas-discharge tubes as shown in Figure 1. The authors found that the application of one SG-2P gas-discharge tube will provide an equal stabilization effect. Figure 2 shows a voltage stabilization circuit with one gas-discharge tube. The authors have the opinion that the latter circuit will be adequate in a number of possible applications. There are 2 circuit diagrams and 1 graph.

Card 1/1

1952, V.

Steel Industry, and Trade

Collective agreement of a metallurgical plant, V pom. profaktivu, 13, No. 6, 1952

Monthly List of Russian Accessions, Library of Congress, May 1952, Unclassified.

NUL'MAN, N. (Kiyev); SUKHENKO, V., glvnyy inzhener (Kiyev).

Obtaining decorative-finishing laminated plastics. Stroi.mat.,  
izdel.i konstr. 2 no.6:15-16 Je '56. (MIRA 9:8)

1. Direktor kombinata "Stroydetal'" (for Nul'man).  
(Plastics) (Tiles)

SUKHENKO, V.F.

DOLGOV, S.I., doktor sel'skokhozyaystvennykh nauk; SUKHENKO, V.F., ag-  
ronom.

Effectiveness of productive leaching of saline soils of the Mili  
Steppe in the Kura-Aras Lowlands. Gidr. 1 mel. 6 no.8:51-62 Ag '54.  
(MLRA 7:9)

(Mili Steppe--Soil conservation) (Soil conservation--Mili Steppe)

PRODANOV, V.I., starshiy nauchnyy sotrudnik; MARCHENKO, N.S., veterinarnyy vrach; SUKHENKO, V.P., veterinarnyy fel'dsher

Treatment of mastitis in cows. Veterinariia 39 no.1:43-45 Ja  
'63. (MIRA 16:6)

1. Krasnodarskaya nauchno-issledovatel'skaya veterinarnaya stantsiya (for Prodanov). 2. Krasnodarskaya krayevaya veterinarno-bakteriologicheskaya laboratoriya (for Marchenko). 3. Kolkhoz imeni Kalinina, Novotitarovskogo rayona, Krasnodarskogo kraya (for Sukhenko).

(Udder--Diseases)

SUKHENKO, YE. K.

VOLODARS'KA, D.M.; GOROKHOVS'KYY, M.E.; KONDRAT'YEV, S.F.; PRAKHOV, M.M.;  
KOVPANENKO, T.M.; SUKHENKO, Ye.K.; LYASHEVS'KA, V.F.; ZHEL'NIO, T.M.;  
KHIVRICH, G.K.; GEORGIYEVSKYY, M.I.; MAYVEL'T, E.M.; DENISENKO, L.,  
veduchiy redaktor; PATSALYUK, P., tekhnichniy redaktor

[Hints for everyday living] Pobutovi porady; Vyd. 3-ie, vypr. 1  
dop. Kyiv, Derzh. vyd-vo tekhn.lit-ry URSR, 1957. 184 p.  
(Home economics) (MIRA 10:8)



GERMAN, A.N., veterinarnyy vrach; ZOZULYA, Ye.A., veterinarnyy vrach;  
SUKHENKOV, G.Ye.

Sanguinicolosis of carp. Veterinariia 41 no.8:54-55 Ag '64.  
(MIRA 18:4)

1. Respublikanskaya veterinarnaya laboratoriya Ukrainskoy SSR  
(for German, Zozulya). 2. Ukrainskiy nauchno-issledovatel'skiy  
institut rybnogo khozyaystva (for Sukhenkov).

SUKHERMAN, B.

The KShP-3 bailer-screw grain loader is a good machine. Muk.-elev.  
prom. 28 no.2:30 F '62. (MIRA 15:3)

1. Direktor Mogilev-Podol'skoy realizatsionnoy bazy.  
(Grain-handling machinery)

SUKHETSKAYA, I.P. (Kiyev, ul. Artema, 74, kv.10)

Development of reticular matter of the spinal cord in man [with  
summary in English]. Arkh.anat.gist. i embr. 34 no.3:30-36 My-Je '57.  
(MIRA 10:10)

1. Iz kafedry normal'noy anatomii (zav. - zasluzhennyi deyatel' nauki  
prof. M.S.Spirov) Kiyevskogo ordena Trudovogo Krasnogo Znameni medi-  
tsinskogo instituta im. akad. A.A.Bogomol'tsa.  
(SPINAL CORD, embryol.

reticular matter develop.in man (Rus))

SUKHETSKAYA, M. P.

SUKHETSKAYA, M. P.- "Reticulate Matter in the Human Spinal Cord." Kiev Order of Labor Red Banner Med Inst imeni Academician A. A. Bogomolets, Kiev, 1955 (Dissertations for Degree of Candidate of Medical Sciences)

SO: Knizhnaya Letopis' No. 26, June 1955, Moscow

SHEVELEV, F.A., doktor tekhn.nauk; GORIN, G.S., inzh.; MINTS, D.M., prof., doktor tekhn.nauk; SUKHIAHVILI, N.K., kand.tekhn.nauk; MIKHAYLOV, N.M., inzh.; NINEMYAGI, D.K., red.izd-va; TEMKINA, Ye.L., tekhn. red.

[Fourth International Water Supply Congress] IV Mezhdunarodnyi kongress po vodosnabzheniiu. Pod red. F.A.Sheveleva. Moskva, Gos.izd-vo lit-ry po stroit., arkhitekt. i stroit.materialam, 1960. 111 p. (MIRA 13:9)

1. International Water Supply Congress. 4th, Brussels, 1958.
2. Deyatvitel'nyy chlen Akademii stroitel'stva i arkhitektury SSSR (for Shevelev).  
(Water-supply engineering--Congresses)

SUKHIAHVILI, N.K.

One more important potential. NTO 3 no.4:7 Ap '61. (MIRA 14:3)

1. Zamestit' ministra mestnogo khozyaystva Gruzinskoy SSR.  
(Compost) (Sewage as fertilizer)

SUKHIAHVILI, N.<sup>15</sup> kand.tekhn.nauk

Valuable garbage. MTO 3 no.12:22 D '61.

(MIRA 15:1)

1. Zamestitel' ministra mestnogo khozyaystva Gruzinskoy SSR.  
(Refuse and refuse disposal)

SUKHIKH, A.A.; KRATIROV, D.A.

Treating bundles of export lumber with antiseptics. Der. prom.  
14 no.5:20-21 My '65. (MIRA 18:6)

1. Arkhangel'skiy lesopil'no-derevoobrabatyvayushchiy kombinat  
imeni V.I. Lenina.



ЖУРНАЛ, т. VI.

Development of collateral lymph circulation in a Flaccid  
extremity in a dog during the exclusion of motor innervation.  
Trudy Izhv.gos.med.inst. 21:2:16 '64.

(1964 1965)

1. Katedra normal'noy anatomii Izhvskogo gosudarstvennogo instituta  
(zav. - prof. V. P. Golev) i katedra normal'noy anatomii i fiziologii  
Leningradskogo meditsinskogo instituta (zav. - akademik V. I. Pavlov)

BABCHENKO, V.N., otv.red.; SUKHIKH, L.G., starshiy inzh.-agrometeorolog, red.; MARTYNOV, S.I., red.; PERMYAKOVA, A.I., red.; ROGOVSKAYA, Ye.G., red.; SERGEYEV, A.N., tekhn.red.

[Agroclimatic handbook for Perm Province] Agroklimaticheskii spravochnik po Permskoi oblasti. Leningrad, Gidrometeor.izd-vo, 1959. 131 p. (MIRA 13:11)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye gidrometeorologicheskoy sluzhby. Ural'skoye upravleniye. 2. Nachal'nik Ural'skogo upravleniya gidrometsluzhby (for Babchenko). 3. Direktor Sverdlovskoy gidrometeorologicheskoy observatorii (for Martynov). Nachal'nik otдела klimata Sverdlovskoy gidrometeorologicheskoy observatorii (for Permyakova).

(Perm Province--Crops and climate)

BABCHENKO, V.N., otv.red.; ZHDANOVA, L.P., red.; NEDOSHIVINA, T.G., red.  
Prinimeli uchastiey: MARTYNOV, S.I., red.; PERMYAKOVA, A.I.,  
red. SUKHIKH, L.G., red.; BRAYNINA, M.I., tekhn.red.

[Agroclimatic manual for Chelyabinsk Province] Agroklimaticheskii  
spravochnik po Cheliabinskoi oblasti. Leningrad, Gidrometeor.  
izd-vo, 1960. 155 p.

(MIRA 14:4)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye gidrometeorolo-  
gicheskoy sluzhby. Ural'skoye upravleniye. 2. Direktor  
Sverdlovskoy gidrometobservatorii (for Martynov). 3. Nachal'nik  
otdela klimatologii Sverdlovskoy gidrometobservatorii (for  
Permyakova).

(Chelyabinsk Province---Crops and climate)

SUKHIKH, L.I. (Moskva)

Determining the optimum shape of a longitudinal groove for  
rotating shafts. Izv. AN SSSR Otd. tekhn. nauk. Mekh. i  
mashinostr. no.2:177-179 Mr-Apr '63. (MIRA 16:6)

(Shafting)

PHASE I BOOK EXPLOITATION

SOV/4086

Beda, L. M., L. N. Korolev, N. V. Sukhikh, and T. S. Frolova

Programma avtomaticheskogo differentsirovaniya dlya mashiny BESM (Automatic Differentiation Program for the BESM [High-Speed Electronic Computer])  
Moscow, 1959. 19 p. (Series: Elektronnyye vychislitel'nyye mashiny)  
500 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut tochnoy mekhaniki i vychislitel'noy tekhniki.

PURPOSE: This booklet is intended for programmers and engineers working in the field of computer technology.

COVERAGE: The booklet contains a general description of a program and method for the analytical differentiation of functions on the Soviet high-speed digital computer BESM. The method and program were worked out at the Institute of Precise Mechanics and Computer Technology, Academy of Sciences USSR. At the end of the book are found block-diagrams for BESM solution of the following mathematical problems: the representation of a mathematical expression by a sequence of pairs; the derivation of the derivatives of elementary pairs; and the synthesis of

Card 1/2

KRIKUN, V.Ya., inzh.; SUKHIKH, S.P., inzh.

Bringing pipe bending to the assembly site. Stroi. truboprov. 8  
no.3:29-30 Mr '63. (MIRA 16:5)  
(Pipe bending--Equipment and supplies)

SUKHIKH, S.P.

Movable machine for cold pipe bending. Biul.tekh.-ekon.inform.Gos.-  
nauch.-issl.inst.nauch.i tekhn.inform. 16 no.7:14-15 '63.  
(MIRA 16:8)

(Pipe bending)

S/190/63/005/004/020/020  
B101/B220

AUTHORS: Ivanov, V. S., Sukhikh, T. A., Breger, A. Kh., Osipov, V. B.,  
Gol'din, V. A.

TITLE: Radiation polymerization of maleic N-phenyl maleinimide in  
solid state

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 5, no. 4, 1963, 628

TEXT: Maleic N-phenylimide, m.p. 89 - 90°C, was polymerized by Co<sup>60</sup> gamma  
irradiation. The irradiation yield was ~1000 molecules per 100 ev. At  
87.5°C, 0.65 Mr/hr and a dose of 2.2 Mr, 32.5 % of polymer was obtained.  
At 20°C this yield decreased to 4.5 - 6.5 %. More complete polymerization  
(79.5 %) was achieved by further heating to 100°C of the ampoules that had  
been irradiated at 82°C. With 2 - 5 Mr light yellow crystalline powders  
were obtained, with 10 Mr brown amorphous substances. Dependent on the  
conditions of production, the polymers are heat-resistant up to 250 - 330°C,  
soluble in dimethyl formamide and CS<sub>2</sub>, insoluble in H<sub>2</sub>O, acetone, CCl<sub>4</sub>,  
benzene, toluene, heptane and cyclohexane. The IR spectra of the polymers  
showed bands of the phenyl ring, the carbonyl group and the C-N bond.

Card 1/2



Radiation polymerization of ...

S/190/63/005/004/020/020  
B101/B220

From a comparison of the IR spectra of monomer and polymer it was concluded that in the course of polymerization the C-C bonds are opened.

SUBMITTED: July 26, 1962

Card 2/2

S/0190/64/006/005/0782/0786

ACCESSION NR: AP4037271

AUTHORS: Ivanov, V. S.; Sukhikh, T. A.; Medvedev, Yu. V.; Breger, A. Kh.;  
Osipov, V. B.; Gol'din, V. A.

TITLE: Studies in radiation polymerization. 3. Radiation polymerization of  
piperylene in channel complexes of urea

SOURCE: Vy\*sokomolekulyarny\*ye soyedineniya, v. 6, no. 5, 1964, 782-786

TOPIC TAGS: piperylene polymerization, urea clathrate complex, endocytic  
clathrate component, channel polymerization, tube structure, trans piperylene  
polymer

ABSTRACT: Urea clathrate complexes with piperylene as endocytic component were  
prepared by mixing 1 gm urea with 0.001— 0.1 ml methanol, cooling in a glass  
ampule to -78C, and adding 1-3.7 moles of cooled piperylene per mole of urea. The  
polymerization of piperylene was achieved by  $\gamma$ -irradiation with Co<sup>60</sup>. Parallel  
studies on block-polymerization of piperylene were conducted at -78C with irradi-  
tion doses of 30 Mrad. After 2 to 6 weeks at -78 to -45C, the residual piperylene  
monomer was removed by means of a vacuum pump. The urea was then dissolved in 10%  
acetone, leaving polymers whose specific viscosity, degree of unsaturation, and

Card 1/2

ACC NR: AT7000960

SOURCE CODE: UR/0000/66/000/000/0019/0026

AUTHOR: Pavlovich, N. V. (Doctor of technical sciences; Deceased); Sukhikh, V. T.

ORG: Kiev Technological Institute of Light Industry (Kiyevskiy tekhnologicheskii institut legkoy promyshlennosti)

TITLE: Thermophysical properties of  $\epsilon$ -caprolactam and poly- $\epsilon$ -caprolactam

SOURCE: AN UkrSSR. Teplofizicheskiye svoystva veshchestv (Thermophysical properties of materials). Kiev, Izd-vo Naukova dumka, 1966, 19-26

TOPIC TAGS: polymer physical chemistry, heat conductivity, heat transfer coefficient, THERMAL EXPANSION, LACTAM, CAPROLACTAM

ABSTRACT: In view of the importance of the physical properties of polymers, the article presents tables of the physical properties of  $\epsilon$ -caprolactam and poly- $\epsilon$ -caprolactam as a function of temperature. The properties include density of the solid heat transfer coefficients and thermal conductivity. It is found that the density of the  $\epsilon$ -caprolactam is a linear function of temperature. The data indicate that the polymer which contains a higher concentration of low molecular weight compound melts at a lower temperature. Experimental data show that the calculated thermal expansion coefficient  $\alpha$  for polycaprolactam is  $0.40 \text{ kg/m}^3 \cdot \text{deg}^{-1}$ . The data include those determined by the authors and those reported in the literature by other authors. Orig. art. has: 11 tables.

SUB CODE: 07.20 /

SUBM DATE: 10Mar65/

ORIG REF: 005

Card 1/1

SUKHIKH, V. T. and PAVLOVICH, N. V. (Kiev technological institute of light industry)

"Data on investigations of thermal physical properties of certain monomers."

Report presented at the Section on Thermal-physical Properties and Non-stationary Thermal Capacity, Scientific Session, Council of Acad. Sci. Ukr SSR on High Temperature Physics, Kiev, 2-4 Apr 1963.

Reported in Teplofizika Vysokikh temperatur, No. 2, Sep-Oct 1963, p. 321, JPRS 24,651. 19 May 1964.

SEKHIN, D. Ye.

SEKHIN, D. Ye. -- "The Development and Investigation of a New Screw Mechanism for the Working Part of Plucking Equipment." Joint Academic Council, All-Union Sci Res Inst of the Mechanization of Agriculture (VIM), and All-Union Sci Res Inst of the Electrification of Agriculture (VIESKh). Moscow, 1955. (Dissertation for the Degree of Candidate in Technical Sciences)

SC: Knizhnaya Letopis', No 1, 1956

SUKHIN, G.M.

Effect of transplantation of the bone marrow in treating  
sarcoma M-1 in rats with high doses of Thic-TEPA. Vop.  
onk. 11 no.3:48-52 '65. (MIRA 18:6)

1. Iz laboratorii eksperimental'noy terapii opukholey (zav. -  
doktor med. nauk V.M. Bergol'ts) Gosudarstvennogo onkologicheskogo  
instituta imeni P.A. Gertsena (dir. - prof. A.N. Novikov).

13089

SUKHIN, K.

USSR/Cities - Leningrad 6202.0318  
Manufacturing Areas 4401.0200

Dec 1947

"Industrial Leningrad," K. Sukhin, 5 pp

"Slavyane" No 12

Short discussion of some of more important industrial installations of city and indication of items produced in some cases. Plants mentioned are: Elektrosila imeni Kirov, Krasnyy Treugol'nik, Ravenstvo, Krasnyy Vyborzhets, plants imeni Stalin, imeni Kotlyakov, imeni Sverdlov, Krasnaya Vagranka, Metalist, Vulkan, Skorokhod, Bol'shevik and Rabochiy. More detailed information is given concerning Elektrosila imeni Kirov and turbine plant imeni Stalin.

13089

LC

124-57-2-2496

Translation from: Referativnyy zhurnal, Mekhanika, 1957, Nr 2, p 138 (USSR)

AUTHORS: Kunin, N. F., Sukhin, L. T.

TITLE: The Plastic Compression of Metals at Various Temperature Levels (Plasticheskoye szhatiye metallov pri razlichnykh temperaturakh)

PERIODICAL: Tr. Chelyabin. in-ta mekhaniz. i elektrifik. s. kh., 1955, Nr 5, pp 134-142

ABSTRACT: Presentation of the results of experimental investigations on the plastic compression of a number of metals at various temperature levels; the purpose of the work was the confirmation that for that type of deformation the stresses are an exponential function of the temperature over a broad interval of temperatures. The investigation comprised copper, silver, aluminum, zinc, lead, tin, lithium, sodium, and cadmium. The paper is preceded by a brief survey of the literature on the subject.

1. Metals--Stresses 2. Metals-- G. A. Smirnov-Alyayev  
temperature Factors

Card 1/1



31807

Thermoelectric Phenomena in Deformation of Metals

S/137/60/000/04/11/015

deforming installation. One of the joints was placed in melting ice, the other one in oil. The magnitude of thermo-emf was measured using a mirror galvanometer. It was shown that the thermo-emf produced by deformation consisted of an elastic and a residual component. The elastic thermo-emf produced, may be determined as the difference of thermo-emf under load and after unloading. The elastic component of the thermo-emf produced increased with higher stress. The stress under which the difference between elastic and non-elastic components arises, is designated as the thermoelectric yield limit. It was established that the thermoelectric yield limit of the investigated metals approached the mechanical yield point. During expansion, the elastic thermo-emf has a sign that is opposite to the residual thermo-emf; this causes an inversion of the sign of full thermo-emf if the stress is sufficiently high. It was shown that for the thermo-emf produced, elastic-residual phenomena were observed in the form of a thermoelectric hysteresis.

L. G.

Card 2/2

SUKHIN, L.T. (Chelyabinsk)

Modification of a Chinese toy. Politekh.obuch. no.10:48-50  
0 '59. (MIRA 13:2)  
(Scientific recreations)

SUKHIN, N.L.

Make better use of the transformers. Put' i put.khoz. 7 no.12:16  
'63. (MIRA 16:12)

1. Nachal'nik distantzii, Lozovaya, Yuzhnoy dorogi.

USSR / Cultivated Plants. Plants for Technical Use.  
Oil Plants. Sugar Plants.

M

Abs Jour : Ref Zhur - Biologiya, No 6, 1959, No. 25014

period, sowing was conducted with the application of mulch. The best species of mulch, under conditions of the Issyk-Kul'skaya Oblast' is humus. Results of determining the amounts of weight gain and the diameter of the root collars indicate that the optimal sowing periods of the mulberry seeds in this oblast' must be considered to be the first half of May. -- O. P. Plyusnina

Card 2/2

SUKHIN, V.S.

Cancer of the stomach; data from the surgical clinic of the  
Blagoveshchensk Medical Institute and of the Amur Province  
Oncological Clinic. Vop. onk. 7 no.1:94-96 '61. (MIRA 14:2)  
(STOMACH--CANCER)

SUKHIN, V.S.

Case of bilateral distal epiphysiolysis of the femur. Ortop.  
travm.i protez. 22 no.1:74-75 Ja '61. (MIRA 14:5)

1. Iz kliniki obshchey khirurgii (ispolnyayushchiy obyazannosti  
zaveduyushchego - dotsent A.G.Gladchenko) Blagoveshchenskogo  
meditsinskogo instituta. Adres avtora: Blagoveshchensk-na-Amure,  
Pochtamtskiy pereulok, d.1., Klinika obshchey khirurgii.  
(FEMUR—WOUNDS AND INJURIES)

VOLKOV, Ivan Georgiyevich; GLIKIN, Boris Abramovich; ZABOLOTHNY, Il'ya Yevtikhiyevich; LIKHOTINSKIY, Valentin Sergeyevich; SPEKTOR, David Borisovich; YAVORSKIY, Anatoliy Georgiyevich; SUKHIN, Ye.T., red.; MARTIROSOV, A.Ye., red.; VAYL', T.I., red.izd-va; LAVRENOVA, N.B., tekhn.red.

[Reference book for sea harbor mechanizers] Spravochnik mekhanizatora morskogo porta. Moskva, Izd-vo "Morskoi transport," 1959. 462 p. (MIRA 13:2)

(Harbors--Equipment and supplies)  
(Cargo handling--Equipment and supplies)

22

**Conditions of formation and stability of bitumen emulsions** F. S. Medvedkov and A. F. Sukhina. *Colloid J. U.S.S.R.* 1, 405-24 (1967). A study was made of the strength of the adsorbed layer of the emulsifying agent on bitumen, also, of the surface tension of bitumen in contact with the emulsifier, of the degree of dispersion of bitumen and of the stability of the emulsion. Use of bitu-

men at a high temp. lowers the quality of the emulsion owing to interaction between the bitumen and the soap emulsifier. The effect of NaOH, NaCl, KCl, CaCl<sub>2</sub>, CaSO<sub>4</sub>, MgSO<sub>4</sub>, FeCl<sub>3</sub> and BaCl<sub>2</sub> on bitumen emulsions was investigated. Univalent ions, when used up to a certain max., improve bitumen-H<sub>2</sub>O-soap emulsions, while the other ions cause their partial or complete destruction. Bitumen emulsions are more stable at low temps. than at high, owing to decrease in strength of the adsorbed layer of the emulsifier on the bitumen at higher temps.

S. I. Madorsky

ASH S.E.A. METALLURGICAL LITERATURE CLASSIFICATION



Control of condensation of neoleucorite resins. F. S. Molyudkov and A. L. Sukhina. *Dokl. Akad. Nauk SSSR*, 1961, 161, 1160. The process of condensation of CHCl<sub>3</sub> with PhOH is most conveniently followed from relative measurements. The temp. coeff. of the reaction is 1.1 at 60-70°. The velocity rises with increasing [CHCl<sub>3</sub>] and falls with rising [MeOH] of the mixt. — R. C. P. A.

LA

12

PROCESSES AND PROPERTIES INDEX

Reaction between bitumen emulsions and fillers. B. S. Medvedkov and A. F. Sukhina. *Bumashnaya Prom.* 18, No. 7, 38-40(1977). Insufficiently stable bitumen emulsions are destroyed by powdery and fibrous fillers such as asbestos, linters, sulfite cellulose, kieselguhr, kaolin and wood flour. The stability of the emulsions may be increased by increasing the content of the emulsifier, decreasing the diam. of the emulsified bitumen droplets or by pre-treating the diam. of the filler with the emulsifier. The liminary treatment of the emulsion in the presence of an electrolyte is analogous to the coagulation of colloidal solutions under the action of electrolytes. In this case the filler apparently plays a secondary role. The limits of coagulation for  $Al_2(SO_4)_3$  and  $CaCl_2$  in the presence of linters in the emulsion are 0.003-0.01 and 0.001-0.003 g. mol. l. B. Z. Kamich

ASTM 35.4 METALLURGICAL LITERATURE CLASSIFICATION

12

25

Hydroxyfuchson dyes. IX. Structure and color of hydroxymethoxyfuchsones. I. S. Ioffe and A. P. Sukhina. *Zhur. Obshchei Khim.* (J. Gen. Chem.) 19, 1107 (1944); cf. C.A. 43, 8683d. — Absorption curves are given for fuchson, 3-methoxyfuchson, benzaurine, mono- and di-3-methoxybenzaurines, and its derivs. in unionized state give similar curves in the visible region, but HO and MeO groups cause a small bathochromic shift. Hydroxyfuchsones in mineral acids give curves which are identical regardless of the nature of the acid. Benzaurines are more intensely colored in acid or alk. solns. than the aurines. MeO groups cause a small bathochromic shift in aurines and benzaurines (in acid or alk. solns.). The most satisfactory alk. solu. was 1% borax, as strong alkalis yield colorless carbinol base anions. G. M. Kosolapoff.

Sukhina, A.F.

Quinone series. II. Chloromethoxyquinones. I. S. Sukhina and A. F. Sukhina. *Dokl. Akad. Nauk* 21, 265 (1962); cf. *C.A.* 48, 7200. Methoxylation of chloroquinone with MeOH-ZnCl<sub>2</sub> led not only to introduction of MeO group, but also to displacement of the Cl, i.e., 2nd MeO group. To 6 g. vanillin in 40 ml. 4% NaOH was rapidly added 40 ml. 5% H<sub>2</sub>O<sub>2</sub>, and the dark brown soln. treated after 1 hr. with 8 ml. 20% H<sub>2</sub>SO<sub>4</sub> (8 ml.), chilled, then treated at -32° with 40 g. Na<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> in 75 ml. 20% H<sub>2</sub>SO<sub>4</sub> over 2 hrs., followed by 2 hrs. at 0°, giving 4.9 g. (71%) *methoxy-p-benzoquinone*, m. 141° (from EtOH). Direct chlorination of vanillin in CHCl<sub>3</sub> gave *2,4,6-tri-(MeO)C<sub>6</sub>H<sub>2</sub>CHO*, m. 163°, which (6 g.) in 40 ml. 4% NaOH treated as described above with 40 ml. 5% H<sub>2</sub>O<sub>2</sub> (20 ml.) and acidified with 20% H<sub>2</sub>SO<sub>4</sub> and chilled gave a ppt. of *6-chloro-2-methoxy-p-benzoquinone*, m. 140°, the mixt. can be directly oxidized with Na<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> at -5° as described, yielding 77% *6-chloro-2-methoxy-p-benzoquinone*, orange, m. 158-9° (from EtOH). Similar treatment of *2,4,5-tri-(MeO)C<sub>6</sub>H<sub>2</sub>CHO* gave 60% *5-chloro-2-methoxy-p-benzoquinone*, yellow, m. 172-3° (from EtOH), less sol. in AcOH and EtOH than the 6-Cl analog. The yield of *2,5-dimethoxy-p-benzoquinone* by the Buckel method [*Ber.* 34, 2230 (1901)] is increased beyond 32% by addn. of oxidizing agents to the reaction mixt. and thus reducing the consumption of the starting material in oxidation-reduction reactions failed and the yields were even lower than without such addn. (FeCl<sub>3</sub>, PbO<sub>2</sub>). III. Chlorination of methoxyquinone. *Ibid.* 299-303.—Passage of HCl into methoxy-p-benzoquinone (I) in CHCl<sub>3</sub> gave a blue-violet ppt., free of Cl, m. 238-40° (from PhNO<sub>2</sub>), also formed on addn. of mineral acids to I in AcOH. The product has been described earlier (Erdman, *C.A.* 28, 1237). Thus I functions in the presence of mineral acids as a chlorinating agent. In CHCl<sub>3</sub> with 10% H<sub>2</sub>O<sub>2</sub> it gives a blue-violet ppt. (cf. *ibid.* 303).

decomp. 159° losing HCl and yielding an orange melt which resolidifies and m. 158-63° being transformed to 5-chloro-2-methoxy-*p*-benzoquinone. Thus introduction of a MeO group reduces the stability of quinone dichlorides. *p*-Benzoquinone dichloride m. 146° without decomp., and only at 170-80° does it slowly lose HCl, yielding an unstable monochloroquinone (cf. Dimroth, *et al.*, C.A. 20, 1090). Chlorination of methoxy-*p*-benzoquinone must be done with pure Cl<sub>2</sub>, for even traces of HCl lead to dimerization mentioned above. The heating of the methoxyquinone dichloride is best done by spreading the substance in a thin layer in a dish and heating to 125° in a thermostat. Although its decomp. can lead to 2 isomeric chloromethoxy-*p*-benzoquinones, the product actually obtained is the pure chloro-2-methoxy isomer, m. 173°. The yield reaches 70%. The methoxyquinone dichloride is also unstable on heating in various solvents. Thus in hot aq. EtOH it loses HCl and yields up to 60% 6-chloro-2-methoxy-*p*-benzoquinone, m. 159°. Addn. of the dichloride to hot AcOH gave 5-chloro-2-methoxybenzoquinone, m. 172-3°, also formed in hot dry Me<sub>2</sub>CO, but in aq. AcOH and aq. Me<sub>2</sub>CO the 6-Cl analog is formed. In hot H<sub>2</sub>O the dichloride also yields the 6-Cl deriv. Heating the dichloride in aromatic hydrocarbons under dry conditions gives different results; the substance is not decomp. 1. in boiling xylene for over 1 hr., while hot C<sub>6</sub>H<sub>6</sub> can be used as reagent solvent; the dichloride thus purified m. 170° (decomp.). A trace of H<sub>2</sub>O immediately yields 6-chloro-2-methoxy-*p*-benzoquinone. G. M. K.

IOFFE, I. S.; SUKHINA, A. F.

Quinone

Investigation of quinones. Part 3. Chlorination of methoxyquinone. Zhur. ob. khim. 23, No. 2, 1953.

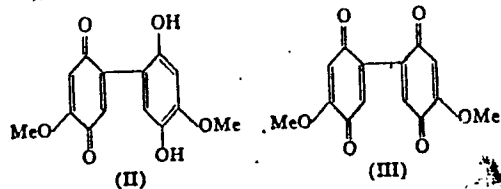
Monthly List of Russian Accessions, Library of Congress, June 1953. Uncl.

Chem Abs

1-48 25 Jan 54

Organic Chem

✓ Quinone series. IV. Transformation of methoxyquinone under the influence of acids. I. S. Ioffe and A. P. Sukhina. *Zhur. Obshchei Khim.* 23, 1370-8 (1953); *ibid.* 29c; Erdtman, C.A. 28, 1337. In contrast with other quinones, methoxyquinone (I), under the action of mineral acids, forms a condensation product with formation of a biphenyl link in a position para to the MeO group. Thus 10 g. I in 100 ml. warm AcOH, poured into 2 l. 1% HCl, gradually yields a blue ppt., which after 48 hrs. amounts to 95% II, m. 230° (crude), m. 238° (from pyridine), which is generally but sparingly sol. in org. solvents.



Reduction of 3 g. II with 3 g. Zn dust in refluxing AcOH gave, upon filtration, diln., and treatment with dil. NaHSO<sub>4</sub>, a 60% yield of [5,5'-bis-(HO)MeOC<sub>6</sub>H<sub>4</sub>]<sub>2</sub>, decomp. 210° (from dil. EtOH); *tetra-Ac deriv.* from Ac<sub>2</sub>O-pyridine, m. 188-7° (from EtOH). II (3 g.) agitated with 3 g. chromic acid in 300 ml. H<sub>2</sub>O gave III, m. 212-14° (from AcOH). I (1 g.) in 10 ml. AcOH treated with 20 ml. concd. HCl gave after 48 hrs. 75% 5,5'-dihydroxy-4,4'-dimethoxy-3-chlorodiphenyl oxide, m. 230-1° (from AcOH), colorless; the diacetate (Ac<sub>2</sub>O-pyridine), m. 220-1° (from AcOH); also obtained in 95% yield from II in warm AcOH with concd. HCl, the blue color of II being discharged at 65-70°. III (5 g.) in 25 ml. AcOH refluxed with 25 ml. concd. HCl gave 85% 5,5'-dihydroxy-4,4'-dimethoxy-3,3'-dichlorodiphenyl oxide, m. 235-8° (from AcOH); diacetate, m. 252-3° (from AcOH).  
G. M. Kosolapoff

(2)  
Chen

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**CIA-RDP86-00513R001653810017-9**

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**CIA-RDP86-00513R001653810017-9"**



SUKHINA, A. F.

USSR/Chemistry

Card 1/1

Authors : Ioffe, I. S. ; and Sukhina, A. F.

Title : Investigation of quinones. Part 9.- Reaction of methoxyquinones with amines.

Periodical : Zhur. Ob. Khim. 24, Ed. 4, 705 - 709, April 1954

Abstract : The reaction of methoxyquinones with amines shows two trends:  
1) addition of the amino radical to the non-substituted carbon atom of the quinoid nucleus and 2) displacement of the methoxyl group by the amino group. The amino radical subjected to the effect of the methoxyl group rapidly attaches itself to the non-substituted carbon atom provided the latter is in para-position relative to the amino group. Displacement of methoxyl group by still another amino radical at an aniline surplus is already much slower. Six references; 3 USSR since 1946; 1 English 1946; 2 German since 1891. Chemical formulas.

Institution : .....

Submitted : July 28, 1953

SUKHINA, A.F.

5-Chloro-8-hydroxyquinoline. Zhur.ob.khim. 32 no.4:1356-1357  
Ap '62. (MIRA 15:4)  
(Quinolinol)

IOFFE, I.S.; SUKHINA, A.F.; ZHUKOVA, Ye.N.

Rhodamine dyes and related compounds. Part 6: Chloride and  
amides of sulforhodamine B. Zhur.ob.khim. 32 no.5:1489-1492  
My '62. (MIRA 15:5)

(Rhodamine)

S/079/63/033/001/022/023  
D204/D307

AUTHOR: Sukhina, A. F.

TITLE: The sulfonic acid of benzylacridine

PERIODICAL: Zhurnal obshchey khimii, v. 33, no. 1, 1963, 317

TEXT: Benzylacridine was heated with 96%  $H_2SO_4$  at  $100^{\circ}C$ , and was then neutralized with aq. NaOH; the precipitated Na sulfonate was dissolved in hot water and the free sulfonic acid was obtained by precipitation on acidifying the water with  $H_2SO_4$ . After recrystallization from water, the acid appeared in the form of fine yellow plates, sparingly soluble in alcohol and acetone. The aqueous solutions exhibited an intense blue-green fluorescence. The Na salt was obtained from concentrated aqueous solutions in the form of colorless needles. Both compounds are new. [Abstracter's note: Essentially complete translation.]

SUBMITTED: July 6, 1962

Card 1/1

IOFFE, I.S.; SUKHINA, A.F.; ZHUKOVA, Ye.N.

Rhodamine dyes and related compounds, Part 8: Amides of sulfo-  
rhodamine B containing N- $\beta$ -hydroxy and  $\beta$ -chloroethyl groups.  
Zhur.ob.khim. 33 no.12:3943-3946 D '63. (MIRA 17:3)

L 29307-66 ENT(m) IJP(c) GP  
ACC NR: AT6012261

SOURCE CODE: UR/0000/65/000/000/0001/0013

AUTHORS: Budker, G. I.; Dimov, G. I.; Popov, A. G.; Sviridov, Yu. K.;  
Sukhina, B. N.; Timoshin, I. Ya. 53

ORG: Institute of Nuclear Physics, Siberian Department AN SSSR  
(Institut yadernoy fiziki Sibirskogo otdeleniya AN SSSR) 641

TITLE: Experimental investigation of charge-exchange injection of  
protons in annular accelerators and storage rings 17

SOURCE: AN SSSR. Sibirskoye otdeleniye. Institut yadernoy fiziki.  
Doklady, 1965. Eksperimental'noye issledovaniye perezaryadnoy  
inzhektzii protonov v kol'tsevyey uskoriteli i nakopiteli, 1-13

TOPIC TAGS: charge exchange, proton accelerator, energy scattering,  
circular accelerator

ABSTRACT: The authors describe experiments on the accumulation of pro-  
tons in an annular track by means of a charge exchange (Fig. 1). A beam  
of atoms or negative ions of hydrogen is introduced on a proton orbit in  
a magnetic field at the point where it crosses a hydrogen jet. The  
particles lose electrons in the jet and are accumulated on the orbit in  
the form of protons. The protons passing many times through the jets  
lose energy and are scattered. In a constant magnetic field the time of

Card 1/3

L 29307-66

ACC NR: AT6012261

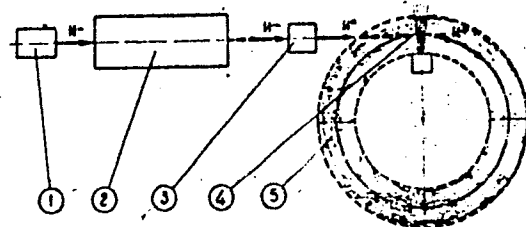


Fig. 1. Diagram of experimental setup. 1 - Source of negative hydrogen ions, 2 - accelerator, 3 - input gas target, 4 - jet of hydrogen on orbit, 5 - storage ring

Card 2/3

L 29307-66

ACC NR: AT6012261

accumulation is limited by the loss of the circulating protons to the inner wall of the storage ring. If the average energy loss is compensated for, the storage time is limited by elastic scattering and by the energy scatter of the protons. The experimental setup was described elsewhere (Mezhdunarodnaya konferentsiya po uskoritelyam Dubna, 1963, [International Conference on Accelerators], Moscow, 993 -- 996, 1964). Methods of measuring the proton current and the proton lifetime in the storage ring are briefly described. Various parts of the experimental setup are described in detail. The ion source was a modified electrostatic generator. Up to  $10^{12}$  protons could be accumulated in the betatron loop (current  $\sim 1$  ampere). The injection efficiency was close to 100%. Hydrogen and carbon dioxide were used for the input targets, with optimal thickness  $2.5 \times 10^{16}$  and  $3 \times 10^{15}$  mol/cm<sup>2</sup>. An accelerating voltage of 200 v was applied in pulses of 500  $\mu$ sec duration, so that accumulation for 2500 revolutions was possible. The loop current increased approximately linearly to 300 ka. The various sources of losses are briefly analyzed. Orig. art. has: 8 figures and 7 formulas.

SUB CODE: 20/ ORIG REF: 001/ OTH REF: 001

Card

3/3

BK



L 25774-66 EWT(m) IJP(c)

ACC NR: AP6016378

SOURCE CODE: UR/0089/65/019/005/0507/0510

AUTHOR: Budker, G. I.; Dimov, G. I.; Popov, A. G.; Sviridov, Yu. K.; Sukhina, B. N.; Timoshin, I. Ya.

ORG: none

TITLE: Experiments with charge exchange injection of protons in a storage ring

SOURCE: Atomnaya energiya, v. 19, no. 6, 1965, 507-510.

TOPIC TAGS: Van de Graaff accelerator, proton, hydrogen ion

ABSTRACT: Negative hydrogen ions were extracted from a high frequency source and were accelerated in a Van de Graaff machine to 12  $\mu$ amp. This beam then struck a neutralizing gas target of hydrogen or carbon dioxide having an optimum thickness of  $2.5 \times 10^{16}$  or  $3 \times 10^{15}$  molecules/cm<sup>2</sup> respectively. The resulting beam of neutral hydrogen atoms then struck a jet of hydrogen having a thickness of  $\sim 10^{17}$  atoms/cm<sup>2</sup>. The hydrogen jet was directed along a radius from the center of a storage ring with an aperture of  $8 \times 4$  cm and an orbital radius of 42 cm. The particle losses did not exceed a few percent with injections up to 1500 revolutions. The orbital current increased linearly for the first 100 revolutions and remained constant for  $\sim 150$  revolutions. During this period the orbital radius of the beam decreased and then struck the internal hydrogen stream. Thus the injection efficiency was close to 100%. These preliminary results indicate that it is possible to accumulate a proton current that is limited only by the space charge. Orig. art. has: 5 figures. NA

SUB CODE: 20 / SUBM DATE: none

Card 1/1

SUICHINA, I.A.

Making axonometric drawings of assemblies. Trudy KIPP no.16:  
127-132 '57. (MIRA 12:7)

1. Krasnodarskiy institut pishchevoy promyshlennosti, Mekhani-  
cheskiy fakul'tet, kafedra nachertatel'noy geometrii i grafiki.  
(Axonometric projection)

SUKHINA, I.A.

Frontal oblique isometry. Trudy KIPP no.16:133-135 '57.

(MIRA 12:7)

1. Krasnodarskiy institut pishchevoy promyshlennosti, Mekhanicheskiiy fakul'tet, kafedra nachertatel'noy geometrii i grafiki.  
(Axonometric projection)

SUKHINA, V.Ya., inzh.

Determining the gear ratio and the efficiency of planetary  
transmissions. Vest.mash. 42 no.4:37-43 Ap '62. (MIRA 15:4)  
(Gearing)

SUKHINENKO, G.A.

86-9-5/36

AUTHOR: Sukhinenko, G.A., Lt.Col.

TITLE: Air Blockade of an Airfield by Bombers at Night (Blokirovaniye aerodroma bombardirovshchikami noch'yu)

PERIODICAL: Vestnik Vozdushnogo Flota, 1957, Nr 9, pp. 14-17 (USSR)

ABSTRACT: In this article the author describes the organization and the procedure of a group exercise by a bomber subunit on the ground in order to study the tactics of bombers in air blockade of enemy airfield at night, to study of the execution of flak evasive maneuvers, and to teach the flying personnel in the proper estimation of the ground and air situation and in making the necessary decisions. One map.

AVAILABLE: Library of Congress

Card 1/1

SUKHINICH, A., inzhener

On a practical way of reinforcing embankments. Rech. transp. 14  
no. 4: 11-12 Ap '55. (MIRA 8:6)

(Embankments)

USSR/ Biolog. -- Ornithology

Card 1/1 Pub. 86 - 30/37

Authors : Sukhinin, A. A.

Title : The black stork in Turkmen

Periodical : Priroda 44/4, 117 - 118, Apr 1955

Abstract : An account is given of observations made of the habits of the black stork, covering migrations in February and September, nest buildings on crags and rearing of young. The nesting was observed in mountainous regions of Turkmen near waters containing a food supply. Three Soviet references (1940 - 1952).

Institution : .....

Submitted : .....

SUKHININ, A.N.

Black stork in Turkmenistan. Priroda 44 no.4:117-118 Ap '55.  
(MIRA 8:4)

1. Bakhyzskiy gosudarstvennyy zapovednik, Turkmeneskaya SSR.  
(Turkmenistan—Storks)



SUKHININ, A.N.

Data on the distribution of certain birds in Turkmenia. Zool.  
zhur.35 no.5:779-780 My '56. (MIRA 9:9)

1.Badkhyzskiy gosudarstvennyy zapovednik.  
(Turkmenistan--Birds)

RUSTAMOV, A.K.; SUKHININ, A.N.

New information on birds of southern Turkmenia. Izv. AN Turk. SSR  
no. 4: 70-76 '57. (MIRA 10:10)

1. Turkmenskiy sel'skokhozyaystvennyy institut im. M.I. Kalinina,  
Badkhyzskiy gosudarstvennyy zapovednik.  
(Turkmenistan--Birds)

SUKHININ, A.N.

Materials on the ecology of the Turkestan harrier eagle *Circus*  
*farox heptneri* Dem. in Badghis. Izv.AN Turk. SSR no.5:132-135 '57.  
(MIRA 10:10)

1. Balkhyzskiy gosudarstvennyy zapovednik.  
(Badghis--Hawks)

SUKHININ, A.M.

Materials on the reproduction and nourishment of the raven in  
Badkhyz. Izv. AN Turk. SSR no.2:88-92 '58. (MIRA 11:4)

1. Badkhyzskiy gosudarstvennyy zapovednik.  
(Turkmenistan--Ravens)